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Your guide to Web development, design & rich Internet applications issue 03

# MASTERCLASS MX 2004

## IT'S FLASH TIME...

**Replace your Web pages with powerful Internet applications today**

### FLASH TIMES TWO

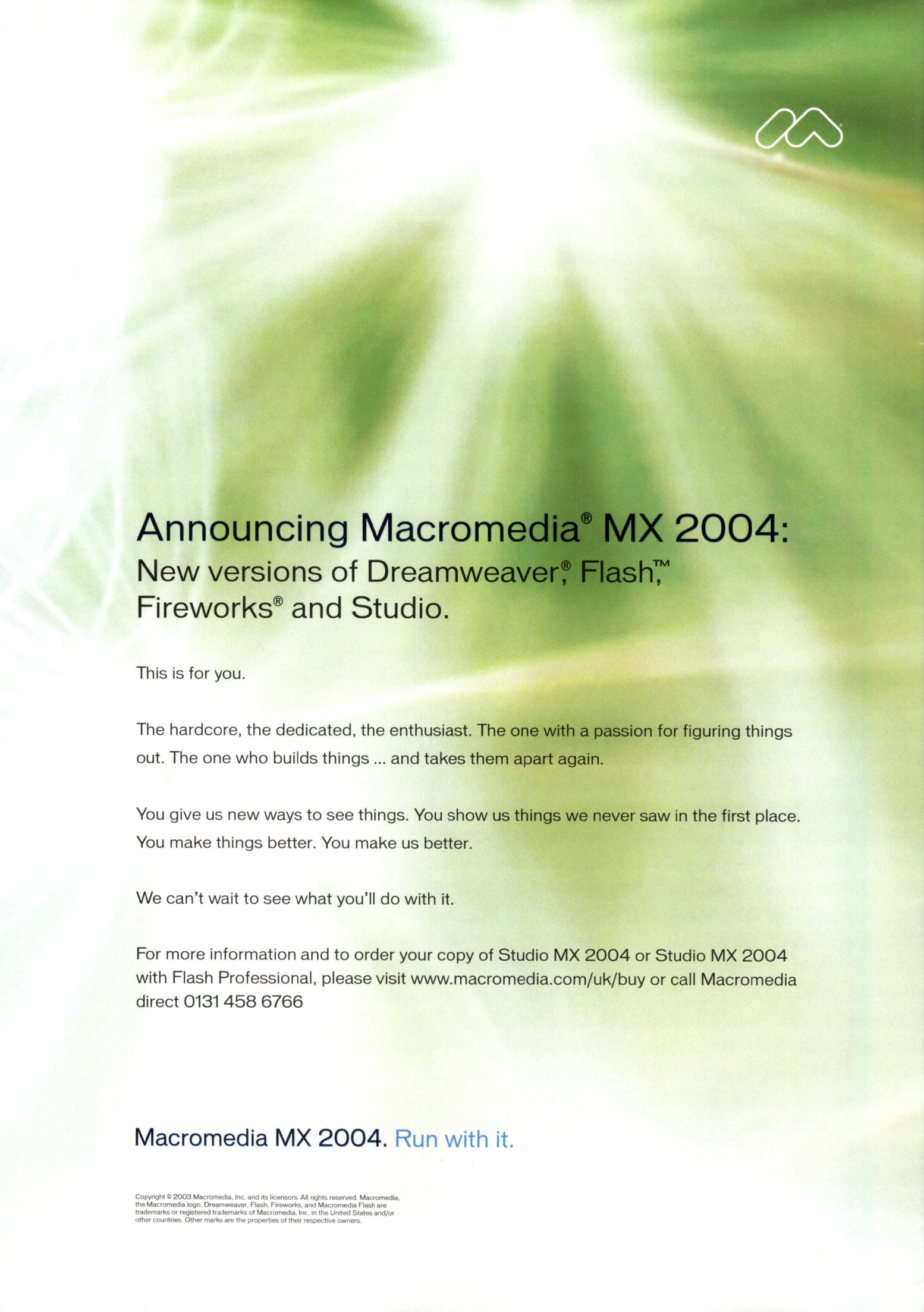
Flash now comes in standard and pro versions – find out which one's right for you

### LET THERE BE LIGHT!

How Lightmaker brings design and business together in Flash MX 2004

Peachpit Press

COMPUTER arts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New versions of Dreamweaver,® Flash,™
Fireworks® and Studio.
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You give us new ways to see things. You show us things we never saw in the first place. You make things better. You make us better.
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For more information and to order your copy of Studio MX 2004 or Studio MX 2004 with Flash Professional, please visit www.macromedia.com/uk/buy or call Macromedia direct 0131 458 6766
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# MASTERCLASS MX2004

## contents

# welcome

Developers working with rich Internet applications have received a boost with the introduction of *Flash MX Professional 2004* and the rest of the *MX 2004* family. The big difference is the development speed, with programmers and designers able to work together more closely and rapidly. In addition, applications in multiple languages can be authored simultaneously, so developers can create content for multiple devices. And embedded video is slicker and smoother than ever.

**Join Macromedia on the free *MX 2004* tour — at a city near you soon Turn to page 10 for more!**

If all this seems a bit overwhelming, don't worry. With this third issue of the *Macromedia Masterclass MX 2004,* we hope to steer you in the direction of whichever version of *Flash MX 2004* is right for you. We'll show you examples of what can be done with the powerful new features. All this, plus exclusive excerpts from a great new book from Peachpit, aimed at whetting your appetite for building your own rich Internet applications.

Look out for the fourth and final supplement with issue 95 of *Computer Arts* – and keep mailing!

COMPUTER arts

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**4 Exploring *Flash MX 2004***
*Now you have even more choice as the premier tool for building rich Internet apps comes in two flavours*

**6 Let there be light!**
*Lightmaker's tool of choice for creating its interactive toys for Cartoon Network is Flash MX 2004 Pro. We find out why*

**10 Replacing Web pages with applications**
*Why you should be creating rich Internet applications in Flash MX 2004*

**16 Win a trip to New York and more**
*Two whole pages of special offers and a great competition*

**18 Why bother?**
*Hear from top Web designers about why they use Flash MX 2004*

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# THE JOY OF FLASH

a word from Macromedia

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Since the term 'dynamic' has been associated with the Web, it has given the Internet a bad name and has, in some cases, provided an unacceptable experience for the end user. Thankfully, the days of slow, clunky, uninspiring data applications are over.

Macromedia *Flash MX 2004* has significant new features which enable developers to easily build and deploy robust rich Internet applications, allowing end users to interact with and access rich content, Web services and streaming data from within a single screen. It's not rocket science, but does appeal to human nature – a good experience will keep us coming back for more.

**FIONA COUGHLAN**
MANAGING DIRECTOR
**MACROMEDIA UK**

overview

Designers have even more choice now that Macromedia's premier tool for building rich Internet applications comes in two new flavours...

# Exploring Flash MX 2004

## Flash MX 2004 Standard

How Large Design created a microsite to promote brand awareness for lighting manufacturer, Leonardo

**Large Design responded to Leonardo's request for more international exposure with a design-led microsite, built in *Flash MX 2004 Standard*. The aim was to provide atailored, easily-navigable experience, with a return for the German company of audience segmentation, sales generation and data-harvesting.**

**"We wanted a site that stood out from the crowded Internet market," explains Creative Director, Lars Hemming Jorgensen. *"Flash MX 2004* offered us the opportunity to create compelling light vector graphics, stream audio as well as in-sync animation and forms to register.**

**"Producing the whole site in *Flash MX 2004* was faster and easier than in previous *Flash* versions. The user interface is improved and the ActionScript library is great for good pieces of code that can be applied easily."**

**For Large, the return was delivering an innovative and high-quality project on time. Leonardo, meanwhile, impressed potential retailers, saw increased awareness of the company's LED products and increased traffic and sales on its main site.**

**www.leonardoled.com**
**www.largedesign.com**

**Screens from the beautifully designed and powerful Leonardo site, all completed in *Flash MX 2004 Standard*.**

Since its beginnings, Macromedia *Flash* has offered rich user experiences over the narrowest of Internet connections. It has evolved into a tool for delivering content to 515 million installed clients, running on desktops, handhelds, mobile phones and a host of consumer appliances such as Sony PS2, Leapfrog toys and TV set-top boxes.

The content has changed, too. Its original Web drawing and animation role has been superseded by more sophisticated tools and a complete Web application development environment. The major features of *Flash MX 2004* include a timeline for sequencing elements and controlling their behaviour and support for rich media, such as MP3 audio and full-motion video. There is the powerful ActionScript programming language for adding programme control and logic, as well as database connectivity capabilities and re-useable components and templates.

As well as authoring capabilities, a major factor in the success of *Flash* is the rapid adoption of the *Flash Player*, now in version 7. The small file size of the player and efficient file structure of *Flash* content are ideal for delivery on even the slowest connections. The high-quality vector-based graphics of *Flash* let users create a consistent, scaleable viewing experience for Web content and applications.

With *Studio MX 2004, Flash* became two applications – *Standard* and

# Flash MX 2004 Professional

How design agency, Mook, used *Flash MX 2004 Professional* to present content on The Month CD-ROM, for *The Sunday Times*

**The Month CD-ROM interface consists of a *Director MX* shell which presents a wide range of video and interactive content, authored using *Flash MX 2004 Professional* as well as other *Studio MX 2004* products. "In many ways, the newest version of *Flash* is a 'mature' technology that allows us to develop interfaces that have scaleable and robust architectures, " says Bruce Collier, head of development at Mook.**

**"For projects like this that require large amounts of ActionScript work and content delivery, *Flash MX 2004 Professional* offers a robust and easy-to-use development environment. The project-oriented file management features enable seamless, organised development when multiple team members are working on the same files.**

**"We can also offer our client a wider range of features in a shorter time frame. The tighter integration between *MX* products has allowed us to build projects more cheaply, and offer a much faster turn-around when design or interfaces changes are needed."**

**www.mook.co.uk**

**Introduced in 2003, The Month is an interactive CD-ROM included with The Sunday Times. Working within a *Director MX* shell, Mook creates the content in *Flash MX 2004 Professional*.**

*Professional* – each with the user's workflow in mind. Traditionally, users of *Flash* fall into two groups. Some create design elements to add that 'wow' factor to content on Websites and other platforms. A greater number design applications in forms as diverse as games, instructional e-learning presentations, product prototypes and simulations, entire immersive *Flash* Websites and highly-functional rich Internet applications.

*Flash MX 2004* brings productivity and performance improvement features to the party. It uses Timeline Effects to add common timeline animations in one step, and adds predefined behaviours to reduce the need to script simple tasks such as common navigation and media controls. Powerful built-in drawing tools can create graphics within the application and allow direct import of EPS and PDF assets.

The enhanced ActionScript 2.0 scripting language enables the creation of sophisticated interactivity and superior user interfaces, while the new Extensibility API means the *Flash* developer community can implement graph and charting functionality, text effects and many other design and development enhancements. Designers can achieve better consistency and workflow thanks to increased task automation and the addition of Cascading Style Sheets (CSS) for *Flash MX* content. Integration has also been strengthened with *Dreamweaver MX 2004, Director MX 2004* and the other design tools in the Macromedia *MX* family.

Government demands for accessible content receive further attention in this release. ActionScript can place accessible tags during run time, thanks to support for dynamic accessibility scripting. New Microsoft Access Accessibility-compliant components, for screen readers and keyboard access systems, allow designers to create content that is open to all users.

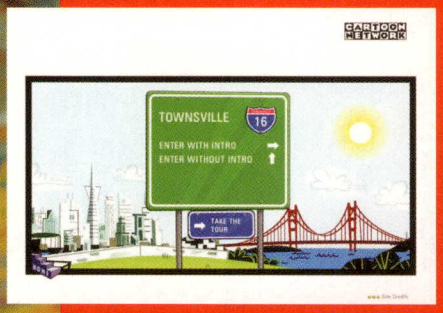
## GOING FURTHER WITH FLASH MX 2004 PROFESSIONAL

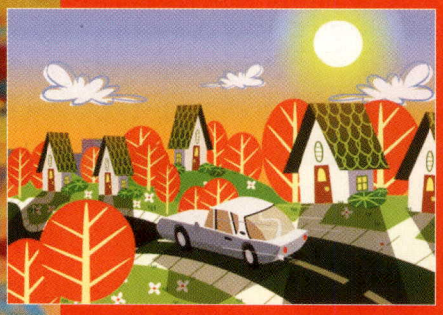
*Flash MX 2004 Professional* adds enhancements for a growing set of designers and programmers. It is aimed at those who demand the most flexible authoring options and who need integration with data sources, as well as a platform suited to team-based development. Desktop application developers are well served by a forms-based development environment, similar to those in tools such as Microsoft *Visual Studio* or Borland *Delphi*. This makes *Flash Professional* more open to developers unused to the timeline and stage metaphor.

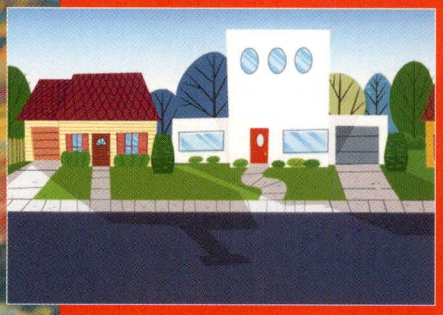
Data-driven applications are easy to build, using data connection and updater components for data sources such as Web services, XML and relational databases. Developers can connect applications to data without writing a line of code, enhanced through ActionScript programming. A new Project Panel improves team-based development, with a project view to manage all related files.

Video professionals can add interactivity and customised interfaces to high-quality video, and fully deliver their professional content using *Flash Player 7* and specialised Streaming Media Components. Once in Macromedia Flash Video format, work can be viewed alone or within a customised interface on one of the numerous *Flash*-supported devices. The Professional version also features support for MIDI ring tones, templates, and device simulators. New device profiles can be added as they become available from third parties. ■

# case study





Some of the views of *Virtual Townsville*, an online world for Cartoon Network, built from scratch by Lightmaker using *Flash MX 2004* and the proprietary TMT platform.

Rob Noble, Managing Director of Lightmaker. Find out more about the company at:

**www.lightmaker.com**

# Flash MX 2004 in action

Right: *Virtual Townsville* lets users direct avatars, based on the Powerpuff Girls, for some character-driven interaction, with each avatar possessing three distinct animated moves.

Far right: Lightmaker used the *Flash* Communication Server to create a one-to-one fighting game, as part of the *Virtual Townsville* user experience.

# LET THERE BE LIGHT

The Lightmaker team live, breathe and talk *Studio MX 2004* – with a passion. Their tool of choice is undoubtedly *Flash MX 2004 Professional*. We take a look at how the company is moving with the times to create a virtual world for Cartoon Network...

According to Rob Noble, Managing Director of Lightmaker, *Flash MX 2004* marks the change from *Flash* being purely a designer's tool into a product that enables users to rapidly create client applications. "It allows for the creation of graphical interfaces which are dynamic, engaging and interactive," he explains. "What we can create with these tools is purely up to our imagination."

*Flash MX 2004 Professional* has also changed Lightmaker's approach to working methods and other aspects of its business. "From a technology perspective, *Flash MX 2004* lets you start to apply design and development methodologies," suggests Noble. "Before this, you really couldn't apply these concepts with ease. Being able to separate business logic from design allows us, as developers, to quickly create testable, re-usable and robust logic."

Lightmaker is responsible for a successful run of e-solutions for clients across a spectrum of industries, including government organisations, banks, retailers and entertainment companies. Formed in 1996, its impressive client list features Disney, Nintendo, NHS National Blood Service and The London Stock Exchange. To get a handle on the latest technologies, Lightmaker works as a Macromedia Alliance Partner – so the team can deliver best-of-breed rich Internet applications (RIA).

"An effective user interface is one of the main factors in a client's online success," recognises Andy Rogers, Lightmaker's Sales and Marketing Manager. "We want to push the delivery of user interface experiences to new levels and ensure a maximum return on investment for clients."

Lightmaker doesn't just use *Flash* as a tool; it seems that the technology is central to the company ethos. The introduction of the Project Panel in *Flash MX 2004 Professional* saw Lightmaker switch its own internal file structure over, to suit. Now all projects are managed via the conventions of the Project Panel naming and filing system.

This makes a lot of sense in the case of Lightmaker – the company is totally devoted to *Studio MX 2004,* creating all graphics and content using Macromedia's suite. The restructuring of the project management system does seem like a logical move when all your software speaks a common language. It also considerably speeds up project development.

The company specialises in the development and deployment of user-friendly, content-managed Web Channels. The key component, here, is the proprietary >

# Flash MX 2004 in action

TotalMediaTechnology (TMT) platform, an integrated framework which has been using *Flash* as a rich client interface since version 5. This is a prime example of a rich Internet application. It enables Lightmaker's clients to provide immersive environments, backed up by a content management system with a very high response time. The original premise for the application, when it was first developed four years ago, was to be able to run multi-user servers through firewalls.

"We didn't have the technology we have today, but Flash Communication Server and *ColdFusion* were used," recalls Noble. "We have developed our own protocols using SOAP and HTTP headers so that we can run the interaction through firewalls.

"Using *Flash MX* was a natural progression. It allowed us to create new and exciting features with TMT," adds Rob Noble. As an example, prior to *Flash MX*, the majority of the technology that ran the TMT platform used XML Sockets for transferring data. The new support for *Flash* Remoting now offers Lightmaker the ability to quickly send and receive data between its back-end servers. "With this data, features could be created that are truly engaging," says Noble. "*Flash MX* also allowed us to create new socket-based systems to create highly responsive gaming features."

## Seamless interaction

One of the major benefits the company has seen is the ability of *Flash MX 2004* to interact with Lightmaker's server-side business logic. "The TotalMediaTechnology 2004 (TMT 2004) platform has been completely built using *ColdFusion MX* Components," explains Noble.

"The integration between *Flash MX* and *ColdFusion MX* is seamless. Data can be retrieved from a database and sent immediately to the client. The client can react immediately and display the information. This is all due to the technologies speaking virtually the same language – you never have to worry about how to integrate this feature with the front-end. The two products working together are extremely powerful."

As a beta site for *Flash MX 2004*, Lightmaker rapidly implemented the new features that this latest incarnation offered. From a design perspective, the change to *Flash MX 2004* offered no problems. "The same standard tools were there, with the addition of some powerful new features such as Bézier curves," adds Noble. "It only took about a week before our designers were developing at the same speed as before the product was released."

Lightmaker took particular advantage of the new features in *Flash MX 2004* in the work it recently completed for a new site for The Cartoon Network. It used TMT 2004 to increase the registered user base and increase traffic to the TV company's Nordic site. The aim was to use it as a business case for deploying a virtual world experience across the whole brand.

## Rich Internet animation

Lightmaker met the challenge by creating *Virtual Townsville*. A fully immersive, interactive branding experience for the Cartoon Network's *Powerpuff Girls*, it provides multilingual, canned chat for safe communication between children from different countries. It also includes branded environments, embedded *Shockwave* games, ongoing scoring and unique identification complete with a full data mining and statistical analysis package.

*Virtual Townsville* is the first multi-user, interactive and immersive Cartoon Network brand experience. During its early development stages, concepts and interactive experiences were envisaged – and almost all of them were possible with the use of *Flash MX, ColdFusion MX* and the *Flash Communication Server.*

With avatars in the shape of characters from the show, users can navigate through the site, walk, talk, drop weapons, view brand material and play games. Users have their own 'rooms' in Townsville and gain points by completing and winning the games featured on the site.

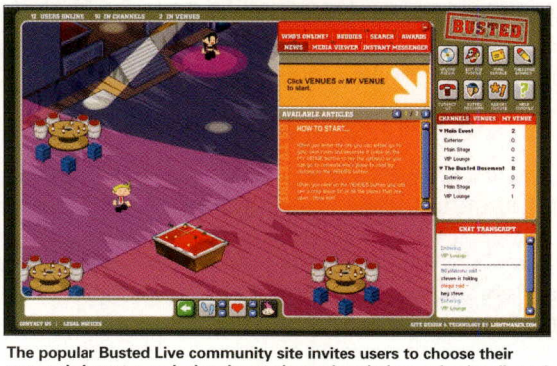
# Interact in a virtual world

*Flash* drives pop boy band Busted's live community

**Lightmaker's TotalMedia-Technology 2004 platform is, in simple terms, a polling engine. It's a client-to-server request that is polled every two seconds. "When you move your character around an environment the client requests the server to see if anyone else has moved in two seconds," explains Rob Noble. "That's how you create an interaction."**

**In Web channels built with TMT 2004, you can invite users into your online apartments and edit the environments to suit their taste – all in *Flash*. On sites like *Virtual Townsville* and *Busted Live*, character-driven chat is the key.**

**Character avatars can be customised by the user. Various looks are available, while each character has at least three dedicated actions. Every user can edit their profile.**




**The popular Busted Live community site invites users to choose their personal character, make her dance, change her clothes, upload audio and video, use animated emoticons and decorate a venue.**

**Users can upload graphics from their desktop to their profile, using an Upload Media command. They can also upload video snapshots as messages in chat rooms.**

**TMT worlds can feature an in-built email system and buddy list for seeing who's online, for instant messaging. "Buddy networks are built on a 'six degrees of separation' concept, because finding out who is in your buddy's Buddy List is a good way to create a community," explains Noble.**

**It's not all fun and games, though. Mako, one of the leading stock derivatives companies in the world, uses TMT 2004 for displaying live share price feeds on its site. The possibilities seem endless.**

Points equal *Townsville* dollars, with which users can go shopping in Downtown, for wallpapers, screensavers and so on. The site even allows users to pick fights with each other online. The one-to-one fighting game uses the Flash Communication Server, seamlessly integrating with *Flash* as part of the user experience.

"For *Virtual Townsville,* the Flash Communication Server allowed us to create server-side applications that could send information directly to the client without requests," says Noble. "We've used Flash Communication Server before for streaming video, but this time it was decided to stream only data which worked extremely well. All the fights on Cartoon Network use the software – responsiveness is impressive."

When the developers were working on later parts of the project, *Flash MX 2004* enabled the team to import video directly into the interface, displaying clips of Cartoon Network shows that were integrated directly into the *Townsville* environments.

## Richer interfaces

"The product offers great compression features which in turn allow us to develop richer interfaces without huge bandwidth costs," adds Noble. "All of these features really impact on all projects that we develop for clients. We can produce richer, more interactive Web experiences faster and more robustly and, as a company, we can organise and maintain our logic and design assets more effectively."

*Flash MX 2004* also introduces the concept of components for rich user interfaces. "Using components has allowed us to separate the technology from the design," explains Noble. "Designers only had to worry about creating the beautiful *Townsville* world, while the technologists were dreaming up exciting interactions."

Unable to use the *Powerpuff Girls* animation due to rights issues, Lightmaker replicated the brand: "From the front end design to the interrogator pages, each character from the series was animated in *Flash* with incredible attention to detail. Each environment was created from strict brand guidelines, with polished animation making the environments come to life."

A development team of six took 12 weeks to complete Phase 1, which was created with four language options for the Nordic regions. It's obviously been worth it, as a preview of *Virtual Townsville* has already won the People's Choice Award at the Macromedia MAX Awards, in Utah. It has also been nominated for the Best Entertainment and Gaming site at this year's BAFTA Interactive Awards.

The clients are pleased, too. In terms of a return on investment, Cartoon Network Nordic registered 200,000 new users to the TMT 2004 database within six weeks. The registered user base for Cartoon Network Nordic tripled in less than two months – a 98 per cent increase in site users.

"Working with the team at Lightmaker is a consistently rewarding and enjoyable experience," testifies Peter Drake, Creative Director for Cartoon Network Europe. "Using their unique expertise in building virtual worlds we have been able to bring to life the world of the *Powerpuff Girls* for our users in an entirely groundbreaking way."

This month, Lightmaker is launching the site for the UK, taking advantage of the new features of *Flash MX Professional 2004.* Phase 2 enhancements will include a Top 100 feature, rewarding players who gain the most points with a golden joystick in their Townsville room, a trophy and a gold star under their character name. Planned new environments include snowy and rainy scenes, a fairground and a scoreboard.

"Using *MX 2004* for Phase 2 has really sped up the development process," says Noble. "That, for me, is its attraction in a nutshell – a greater speed of development and a greater speed of delivery."

Today, 75 per cent of development at Lightmaker centres on the immersive environments based on TMT. "Statistics show there will be 3,000 virtual worlds on the Web in five years," says Noble. The builder of the majority of these worlds, Lightmaker, seems set to play God for some time to come. ■

# Mario Kart Double Dash

Online gaming gets underway in *Flash MX2004*

**Lightmaker has used *Flash MX 2004* for a variety of sites and projects – among them is *Mario Kart Double Dash,* developed for Nintendo. This online gaming experience can display eight languages, with all the content created from scratch in *Flash MX 2004* and *Studio MX*.**

**Lightmaker wasn't allowed to use Nintendo's in-house graphics, but still managed to create a user interface in the style of the brand. In the game, the user must drive their kart around a race track, picking up content, such as video, tips, tricks and images. Finding more content gives the user bonus speed. Once all content has been found, the user unlocks a secret password that gives them access to a downloadable screensaver.**

**There are particularly good implementations of the new enhancements to *Flash MX 2004* in the game. The embedded video features continuous streaming, rather than the 'stream and stall' behaviour seen in previous technologies. The video is an integrated part of the interface, which also includes a floating context-sensitive icon to control the video playback.**

**With the *Mario Kart* project being so successful, Lightmaker is about to take on another Nintendo promotional site, which this time will be authored in *Flash MX Professional 2004*.**

**Developed using *Macromedia Flash MX 2004, Mario Kart Double Dash* is a fun and colourful online experience, designed to encourage users to search for game content.**

# Peachpit books

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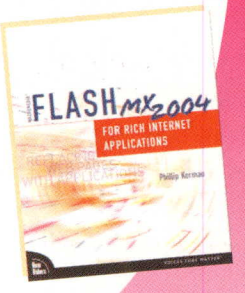
**9 March – Belfast**
**11 March – Brighton**

# Rich Internet applications

MASTERCLASS MX 2004

Read on to find out why you should be creating Rich Internet applications in *Flash MX 2004*

# REPLACING WEB PAGES WITH APPLICATIONS




## On the Computer Arts CD

The extract presented here is from *Flash MX 2004 for Rich Internet Applications* by Phillip Kerman. On the *Computer Arts* CD, we provide chapter two in full (see the Peachpit folder on the root of the disc). Turn to page 16 to get 30% off this great book.

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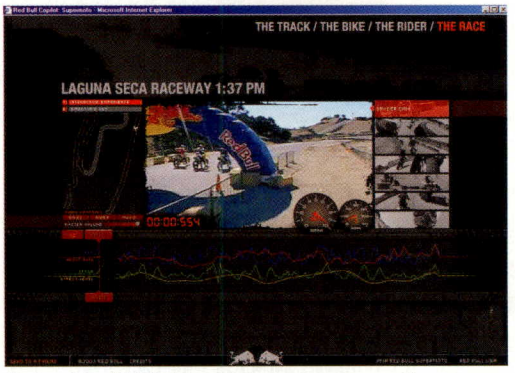
ISBN: 0735713669

What's the difference between a Web page and a Web application? Put simply, a Web page is a presentation, whereas an application is a tool. Don't let that distinction diminish your respect for the value of Web pages, though. As anyone in Web development knows, it is definitely a challenge (albeit a worthy one) to present ideas clearly.

Macromedia *Flash MX 2004* enables you to build engaging applications that you can deliver via the Web, once you have the know-how. It's not as though some line has been crossed and only now is it finally possible to make rich Internet applications. However, the demand has grown recently.




***Flash* and the *Flash* Communications server were used by agency Odopod, to create this interactive, streaming video experience for Red Bull. It features top Supermoto athlete, Jeremy McGrath. Visitors to www.redbullcopilot.com can co-pilot the race, controlling seven camera angles, four audio tracks and four data feeds.**

## Flash's standing

*Flash* has been typecast as an animation tool. Although it is great for that, with more and more sophisticated functionality being added, it's trying to break away from that reputation. Attempting to become the rich Internet application (RIA) standard is more than just a marketing ploy. It's really just a matter of letting developers see what's possible. This section examines where *Flash* stands in comparison to its apparent competition.

## Not Java

The one technology that's similar to *Flash* in both capability and penetration is Java. First, realise that there's Java the language (used behind the scenes on the server) and then there's client-side Java (running in the browser). As a language, it's perfectly suited for many uses. On the client side, however, it's lacking. Although Java can achieve great tasks, its significance is hindered by its limitations. Problems include the fact that it can take an enormous amount of work to build a client-side Java app, it takes a long time to get up and running when a user loads a Java app, it can quickly use up your computer's resources, and it often behaves differently on different operating systems. That's not to say bury client-side Java, but the fact is that *Flash* has delivered on promises that Java never could. (*Flash* is easy to build, lightweight, relatively fast performing, and consistent).

## Not Director

Macromedia has a confusingly similar product to *Flash*, called *Director*. *Director* has been around much longer, and therefore its roots are in producing applications that run on the desktop or CD-ROM. The *Director* browser plug-in is called *Shockwave*. In many ways, the capabilities of *Flash* and *Director*

>

# Rich Internet applications

*When you design a good application, it's possible to make Flash even more bandwidth friendly than HTML*

overlap. However, *Director* excels in several key areas: performance, media support and features useful in applications made for the desktop. The fact that people's computers continue to improve reduces the significance of *Director*'s performance advantage. Also, the new *Flash Players* continue to get faster.

In the area of media support, *Director* can display (at run time) nearly any native media format. *Flash* can display only JPG and play only MP3 audio or FLV video. In addition, *Director* can display true 3D graphics while tapping into a computer's 3D video acceleration. Not only can you display 3D models and animations, but you can also use script to change camera angles, object placement or even lighting.

Finally, *Director* is made for desktop applications. *Director* includes several built-in features and ways to extend *Director* native functionality through third-party extras. Pretty much anything any application can do, *Director* can too. For instance, you can make applications that print high-resolution catalogues or automatically update themselves via the Internet.

That said, *Flash* does have some advantages over *Director*, including the following:

- **Support to both read and write XML (whereas *Director* can only read it).**
- **A younger and more streamlined language (though *Director*'s Lingo is perfectly capable, it's hindered by a patchwork of changes).**
- **The *Flash* plug-in is at about 98 per cent of the market, whereas *Director Shockwave* is at roughly 63 per cent.**

The thing is, you can embed *Flash* SWFs inside *Director* and effectively get the best of both tools. However with the new arrival of *Director MX 2004* integration between the two can only improve.

You can find more comparisons between *Flash* and *Director* at www.macromedia.com/software/director/resources/understanding.

## Not HTML or JavaScript

Obviously, *Flash* isn't HTML. There's no point comparing *Flash* applications to static HTML (that is, individual HTML pages coded by hand). However, an application server can dynamically generate HTML on-the-fly. That is, based on user input or timely data, the application server will produce a custom-looking HTML file in a fraction of a second. To users, it looks like a page created just for them. In many ways, this is a *Flash* application's real competition.

Nearly all Internet applications use an application server behind the scenes (that is, on the server side). When you investigate flight schedules, purchase a book or bid at an auction, the chances are that your request is being sent to an application server, which then triggers a follow-up action and generates a response in the form of a new page that you view.

It can be a bit complicated to build, but the worst part (in which *Flash* may be able help) is that the user experience may be lacking. For example, you might fill in a form with 10 different options and click Submit only to find that nothing matches your request. You then go back to make another try – each time sending a request to an application server, which then generates a complete HTML page that must download.

Although *Flash* has the reputation of being a bandwidth hog, when you design an effective application, it's actually possible to make *Flash* more bandwidth friendly than HTML! For example, it's easy to send requests to an application directly from *Flash*. When the response arrives, *Flash* needs only to redraw the appropriate parts of the screen. It doesn't need to reload the whole page (meaning a less-disruptive experience and less bandwidth).

JavaScript can prove quite effective. However, don't try to make full-fledged applications entirely in JavaScript. Basically, JavaScript is a client-side scripting language because it downloads with your HTML. *Flash* also runs on the client side, but *Flash* can reach out to download additional media or data. In the case of JavaScript, the language is nearly identical to *Flash* ActionScript – so it's quite powerful. However, the capabilities of JavaScript are limited to affecting the browser.

As for *Flash*, it can do '*Flash*' things such as animate, play sounds and so on. For the most part, *Flash* can do anything JavaScript can, but better. The notable exception is directly controlling the browser. With JavaScript, for instance, it's easy to open a new window with no browser buttons. For these situations, you'll want to mix *Flash* and JavaScript. That is, *Flash* can easily trigger functions you've defined in your JavaScript by using getURL.

## Flash's coming of age

When *Flash 5* came out, programmers went wild with the new full-fledged scripting language, ActionScript. Then *Flash MX* came out, exceeding everyone's expectations as to how many features could get crammed into a single upgrade. Now *Flash 2004* introduces so many advances it boggles the mind. If nothing else, this progression proves that Macromedia is targeting application developers. It doesn't sound like an attempt to alienate graphic designers and animators, but because they've already adopted *Flash* there's less potential growth in

that area. In any event, *Flash MX 2004* and the *Flash Player 7* are an application developer's dream.

## What's new?

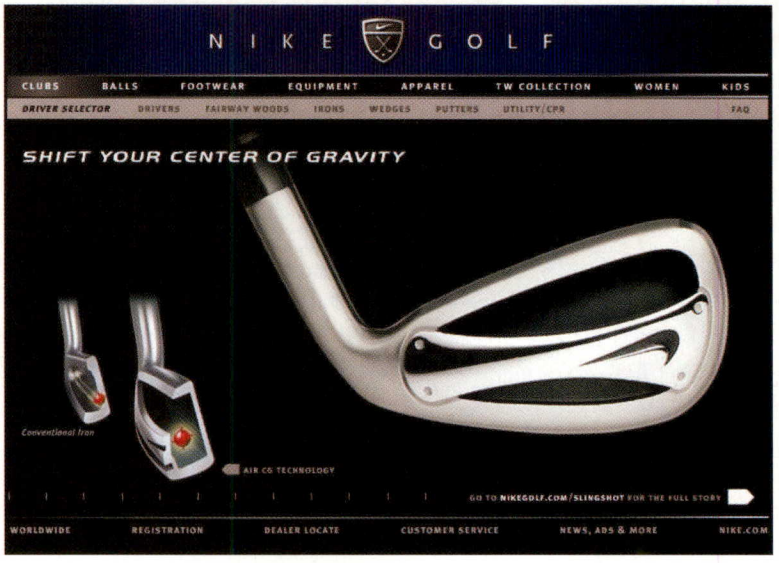
The inclusion of ActionScript 2 will surely attract hard-core programmers. Other features especially geared toward application development include the following:

- **Forced text aliasing enables you, by turning off antialiasing, to ensure that smaller text looks crisp.**
- **Version 2 components sport the new Halo skin, as well as offering improved performance and additional features. This all means you don't have to spend time developing common interface elements – they're already built. Countless other improvements are covered in detail in Chapter 12 of Phillip Kerman's book, *Rich Internet Applications*.**
- **Cascading Style Sheets (CSS) support means you have greater text layout control using a standard format.**
- **Improved array sorting speed and features help you manage large quantities of data.**
- **You can customise the context menu (right-click) and trap changes in the mouse wheel to give the user just one more way to interact.**
- **It offers the ability to respond to the user's mouse wheel. For example, you can scroll a display when they scroll their mouse wheel.**
- **Text metrics give you more information about where text appears.**
- **A MovieClip Loader object simplifies the process of displaying external media.**
- **The addition of the <img> tag can be used to embed images or SWFs within your text displays.**
- **Native support for *Flash* Video files (FLV) and the ability to produce video using nearly any video editor (if you buy *Flash MX 2004 Pro*).**
- **Countless other features that, although cool, may not apply directly to applications.**

## Where Flash fits in

*Flash* can make complex data more digestible. Giving users access to advanced features and infinite sets of data is fine, but it must be presented in a way that makes it easy for them to find what they want. This is where *Flash* fits in.

*Flash* is appropriate for any application where images, sounds or animation can support and enhance a message. Again, it's not as though you're spicing up something that's otherwise boring.




**The Nike golf site was recently redesigned in *Flash* by Summit Projects, to provide easier access to product information. The redesign of the site, at www.nike.com/nikegolf, took only 30 days, included twice as many products and reduced page sizes from 65-100k to 15-45k per page.**

In fact, if a piece of multimedia is not supplementing a message, it is most certainly distracting from it. Chapter 2 of Kerman's book looks at many such considerations. If a media element can help a message, however, you should include it. *Flash* is great at supporting media such as audio, video, animation and text.

One overly simple definition of a *Flash* application is when *Flash* appears by itself in its own window. It's actually possible to integrate *Flash* into HTML frames or tables. That is, *Flash* doesn't have to take up the whole screen. This approach can be a bit more work, and, frankly, there are fewer and fewer reasons to consider it.

Nearly every previously justifiable reason to avoid *Flash* has been addressed. For example, HTML will automatically 'flow' as you change your margins. Although *Flash* can be set to scale, it's not terribly useful as text gets tiny when the window shrinks. People tend to design their *Flash* apps to a fixed window size (which is certainly easiest). However, *Flash* has an onResize event for which you can write code that re-arranges the screen, effectively behaving like HTML. Other show-stopper limits of *Flash* have been addressed, such as making content accessible to people with a variety of disabilities (covered briefly in Chapter 2, on your CD-ROM). The point here is that before you avoid *Flash* for a specific reason, check whether that issue has been addressed.

Finally, one of the most subtle solutions *Flash* can deliver is putting content in a branded display. If all you want to display is a video clip, for example, you can choose from a variety of solutions. However, only

>

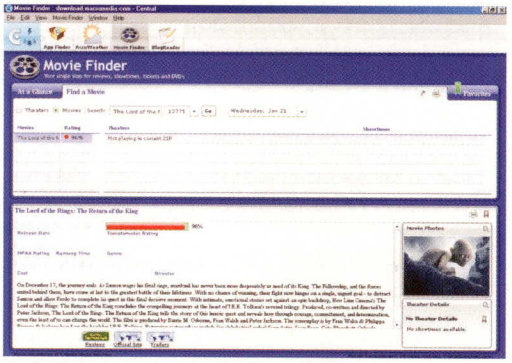
# Rich Internet applications

*And now there's a new home for your Flash applications called Macromedia Central*

*Flash* makes it possible to completely control the look and feel of the interface. Actually, users will always see "About Macromedia *Flash Player*" if they right-click, but that's it. Every other attribute of the viewing experience can include your branded look. Branding is a subconscious way to emphasise your message.

One last note about where *Flash* fits in – there's a new home for your *Flash* applications called Macromedia Central. This browser just plays *Flash* movies. There are additional features and capabilities that you don't get in browser-based *Flash* movies when they run in the Central desktop player. Extra features are supported, such as background tasks (for instance, check a stock price even when the user isn't actively using your app) and the ability to deliver a compelling experience even while offline.

Finally, Central provides an easy way for you to distribute your applications (and charge for them if you want). The reason is that a Central app is really just a *Flash* app that was designed for and deployed using Central. Anyway, check it out, Kerman predicts it will be the next big thing, provided someone makes a killer app for it.




**Movie Finder was one of the first Macromedia Central applications in existence, developed by Beau Amber. As a powerful example of what the technology is capable of, users can find cinema listings, check availability of DVDs for rent, send information to friends direct from the site, find a nearby restaurant and much more, all from within one *Flash*-driven application.**

## MAKEOVERS

The following section walks you through two examples of rich Internet apps, and considers both where they succeed and where they leave a bit to be desired.

### 1) Broadmoor Hotel

This example gets a lot of airtime from Macromedia, even though it's not exactly state of the art (it came out in 2001). In any event, it's useful as an example of an RIA because, for one thing, people can identify with the problem it solves – namely, making a hotel reservation efficiently. If you visit the site at www.broadmoor.com and follow links to make a reservation, you'll see a single-screen reservation tool, as shown in the image below.

**A simple but effective example of an RIA. In one screen, you can view your options and book a room at the Broadmoor Hotel.**

One key feature is that you'll never make a request only to discover, later on in the process, that the dates aren't available, because everything is updated while you make selections. When you click Date Ranges in the calendar on the left, for example, any room types unavailable for those dates are removed from the list in the centre, immediately. Similarly, when you select a room type, the dates for which that room is unavailable are removed from the calendar. Another cool feature is that you're given a photo of the room right inside this interface. The icons provide another subtle but useful visual clue (status options such as available, unavailable or available for a checkout date only).

Finally, you can pay for the room and complete the reservation from the column on the right. Unlike some particularly frustrating sites, you won't fill in a form only to be told you're missing key information (and then have to fill it in again). You never leave this "oneScreen" interface (as it's called by the developer, iHotelier.com). It saves you wasting time and it avoids confuson and disappointment.

Although this example doesn't include a 'before and after,' if you've ever made any sort of reservation online, you'll appreciate some of the advantages of this interface. Note, however, a legitimate criticism of the Broadmoor example – the text is hard to read. If only they'd had the *Flash MX 2004* Alias text option when it was originally developed, the result could have looked a lot better.

# Glossary Rich Internet application terms explained

**PLACES OR TIMES**

**Client side** Code that executes on the user's machine. *Flash* SWFs and JavaScript both run on the client side.

**Server side** Code that executes on your Web server computer. Application server code (such as ColdFusion) is server side, as is the *Flash* Communication Server.

**Author time or design time** Edits you make while building an application.

**Runtime** When an app is running for the user.

**THINGS**

**Killer app** A piece of software so useful that it attracts people to adopt the underlying system needed to run it.

**Rich media** Audio, video or graphics. Really just the new word for multimedia.

**IDE (Integrated Development Environment)** A software tool that gives you complete access to create and edit source files, ie. the *Flash* authoring tool.

**API (Application Programming Interface)** The set of commands and functions that, through programming, give you access to an underlying system. For example, *Flash* has a Drawing API that enables you to draw lines and curves effectively, giving you access to the drawing tools built into *Flash*.

**SDK (Software Development Kit)** The documentation, samples and tools that get you started using a system. For example, you can download and study the SDK for Macromedia Central.

**TECHNOLOGIES**

**Application server** Software that runs on the server side that produces custom HTML on-the-fly. Also, servers that can access local or remote databases.

**Plug-ins** Add-on software tools that extend the functionality of your browser.

**Shockwave** *Director*'s plug-in technology. The .swf extension in *Flash* movies used to stand for *Shockwave Flash*, now it stands for Small Web Format.

**Thin client** The player or client-side component that runs *Flash* movies. Small enough to download quickly.

**HOT WORDS**

**Scalable** Two meanings. A graphic can scale to different dimensions. Also, if you plan for your application to grow, it will be considered scalable if it can handle more and more users (without collapsing).

**Parse** The way you can go through a set of data and extract just the elements that match the objective for which you're looking. Also used to explain the process of translating a set of data to some other format. For instance, going through and capitalising each word involves a parsing process.

**Collaboration** Often used to describe how an application can help a group of people work together.

**Legacy** An existing system. Usually companies expect your new application to work with their legacy systems.

**Mission critical** Overused term, meaning 'really really – no I mean really – important.' The idea is that if you fail to deliver the mission-critical objective, the project is doomed.

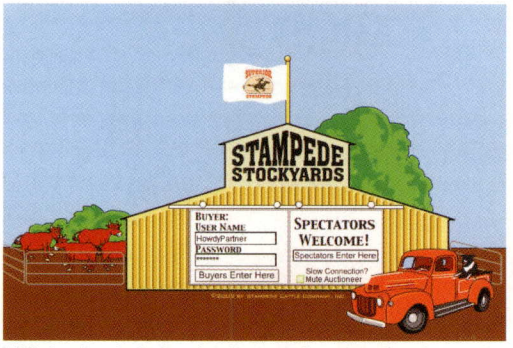
**Populate** Used as a verb to mean 'fill in' or put content in a site or application.

## 2) Stampede cattle

The following example highlights an application built by Phillip Kerman to extend an existing HTML-based cattle auction site with a real-time auction component. That is, they had and still have an auction site similar to eBay's. Buyers can explore the catalogue of available cattle, place bids in advance and, eventually, the cows will go to the highest bidder. Naturally, this can take several days. The client had planned the real-time auction long before the *Flash* Communication Server (FCS) was available. It was like a product made for their application. What Kerman built with the server-side developer was a *Flash* app to serve as a virtual sales ring. You're welcome to attend a live auction at www.stampedecattle.com.

Bidders still place bids in advance using the existing HTML site (the highest pre-bid shows up during the live auction). Then on the day of an auction you can enter the *Flash* interface and see each lot go up for sale. The auctioneer makes a few last-minute announcements and JPGs of the cattle show up in the ring. Then the clock starts ticking. Buyers can place bids, and everyone sees the state from which the bid arrives. It feels like a real auction because you'll often see a buyer from one state trying to outbid another.

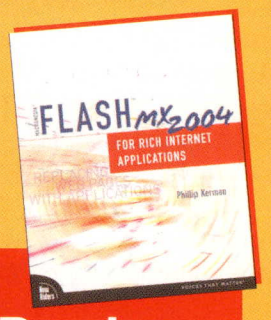
There are other features, including an auditing feature that archives every auction. The auctioneer has a different view of the app, with more details, such as a list of connected buyers. It's a kick to watch (you can log on as a spectator). The sheer volume of cattle involved is amazing – each sale that lasts about one hour involves about $3 million in cattle!




While keeping the look and excitement of a real auction, Stampede Cattle can move $3 million worth of cattle in a matter of hours (without getting their hands dirty).

No attempt was made to replace an existing site – the app was integrated with what the client already had. Kerman used *Flash* where it could do something unique to specifically enable bidders to connect to the same set of data and be notified of changes, in real time. There was a fair bit of audio and animation, too. Although these may seem gratuitous, the goal is to engage the user. It's no secret that the objective is to encourage bids. A live auction has a lot of emotion, so adding a sense of urgency with sound effects and timing made this application effective. ■

*Some of the supporting screenshots featured in this article were added by *Computer Arts* and do not appear in *Flash MX 2004 for Rich Internet Applications*.




## Read more of this book

**The extract presented here is from *Flash MX 2004 for Rich Internet Applications*, by Phillip Kerman.**

**On the *Computer Arts* CD, we provide chapter two in full (see the Peachpit folder on the root of the disc).**

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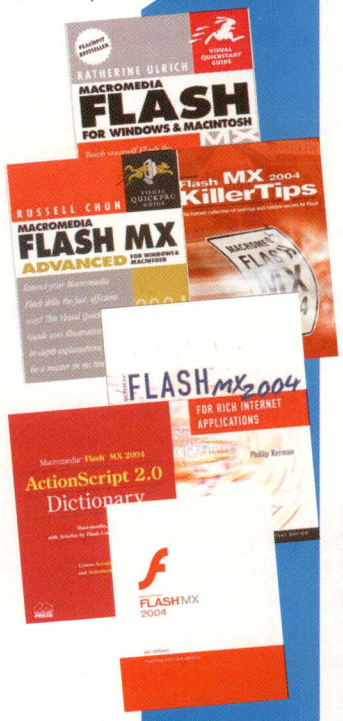
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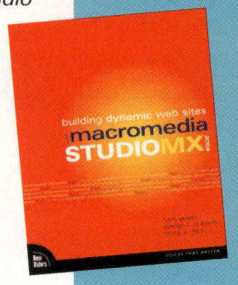


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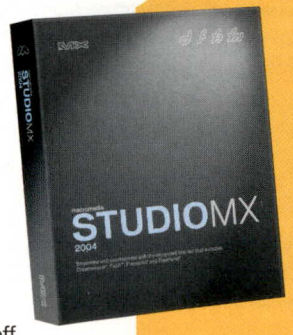


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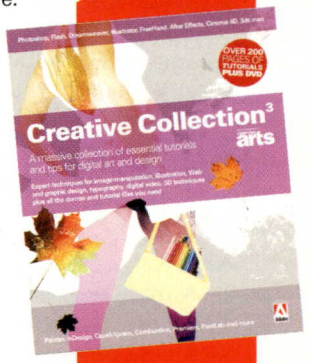

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**b) Yellow**
**c) Blue**

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# why bother?

## Is *Flash MX 2004* really all that it's cracked up to be? To find out, we asked the troops on the frontline of design – the agencies using *Flash* for their everyday work. Here's what they said...

### GOOD INVESTMENT RETURNS

**Name: Chris Edwards**
**Company: Interdirect**
**www.interdirect.co.uk**

"*Flash* has jumped several steps with *MX 2004*, to enable developers to create fully-interactive, rich Internet applications, which can increase return on investment and improve usability. RIAs can be embraced easily and without the user or the client being made aware. As a small implementation of a Flash RIA, we recently implemented a couple of Flash applets for a customer's extranet, which allowed the display of reporting information, but all the client saw was some pretty graphs."

### FILE STREAMING GIVES GREAT VIDEO QUALITY

**Name: Nick Kuh**
**Company: Edition Interactive**
**www.editioninteractive.co.uk**

"We've found the new video capabilities to be one of the coolest additions in *Flash MX Professional 2004*. *Flash 7 Player* can now stream .FLV video files, which was ideal for development on our game, *Photo Safari Challenge*. This is a brand promotion for a client that projects high-quality safari video footage onto a plasma screen. With a camera hooked up to the mouse controls, players point and shoot at the streaming videos for the optimum safari photos.

"Previous versions of *Flash* would not have achieved the required results in video speed and quality, as the videos would have needed to be embedded into .SWF files. *Flash MX 2004* was a great tool and saved us having to invest in more expensive video application development software."

### FLEXIBLE OPTIONS, AT MANY LEVELS

**Name: Pete Barr-Watson**
**Company: Pixelfury**
**www.pixelfury.com**

"*Flash MX 2004* brings so many options for connecting to data sources that, whatever technology your Web application is built on, you can be pretty sure it will offer you a solution. It's hard to find a situation where *Flash* wouldn't be a viable choice when considering client proposals these days, such as bringing a user-centric, good looking GUI to an external data source such as XML, Remoting or Web services.

"In addition, the combined authoring environment in *Studio MX 2004* can be tailored to meet your level of expertise, helping you work more efficiently when building rich media applications."

### MORE CLIENT CONTROL IS BETTER FOR EVERYONE

**Name: Lars Hemming Jorgensen**
**Company: Large Design ltd**
**www.largedesign.com**

"We all know the benefits of *Flash* - it's perfect for creating rich content sites quickly and efficiently. The drawback has always been keeping *Flash*-built sites updated. In order to edit complex .SWF files, even within an agency, you often need the person who created them.

"Obviously this is not a professional solution – customers want sites they can maintain themselves. This is possible with *Flash MX 2004*. We create templates and the content can be changed by the client. The result is better value for clients, as they can edit content in-house, and happier designers, as they no longer get phone calls to edit punctuation or change an image. Any serious creative agency should be using *Flash MX 2004*."

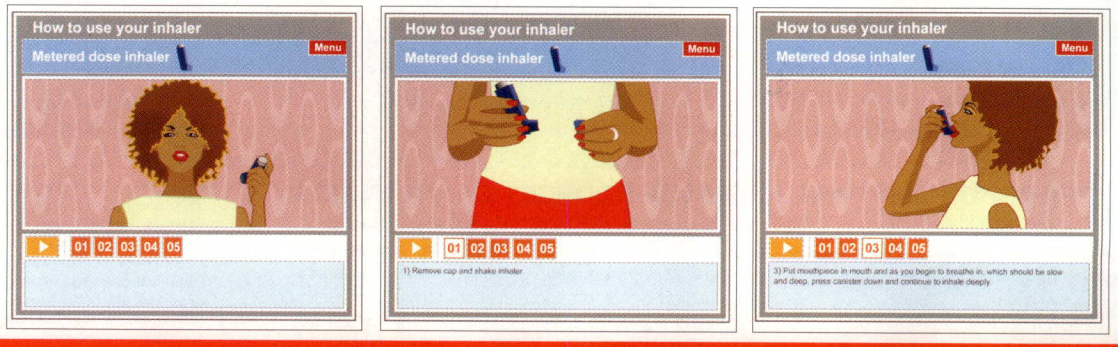
### KEY TIME SAVERS

**Name: Chris Park**
**Company: Bumblebee Design**
**www.bumblebeedesign.net**

"*MX 2004 Pro*'s vastly improved data handling capabilities, and the ease with which images and video can be imported and integrated, perfectly match our vision of how things will develop in the future.

"It has already allowed us to develop two prototype RIAs: one for a major retailer which we feel will revolutionise the way people shop online; the other for a leading event company, showcasing its services through a unique and highly usable interface.

"Developments such as the revised component architecture are key time savers which will allow us to complete these projects on time, in budget."


How to use your inhaler
Metered dose inhaler
Menu
01 02 03 04 05
How to use your inhaler
Metered dose inhaler
Menu
01 02 03 04 05
1) Remove cap and shake inhaler
How to use your inhaler
Metered dose inhaler
Menu
01 02 03 04 05
3) Put mouthpiece in mouth and as you begin to breathe in, which should be slow and deep, press canister down and continue to inhale deeply

**Edition Interactive's work in *Flash MX Professional 2004*, shown on the National Asthma Campaign Website, at www.asthma.org.uk**

# Peachpit

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Jen deHaan
0-321-21342-4 • £33.99

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Katherine Ulrich
0-321-21344-0 • £18.99

### BEYOND THE BASICS

**Macromedia Flash MX 2004 Advanced for Windows and Macintosh: Visual QuickPro Guide**
Russell Chun & Joe Garraffo
0-321-21341-6 • £22.99

**Macromedia Flash MX 2004 Killer Tips**
Shane Elliot
0-735-71383-9 • £30.99

### CODING AND PROGRAMMING SOLUTIONS

**Macromedia Flash MX 2004 ActionScript 2.0 Dictionary**
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Phillip Kerman
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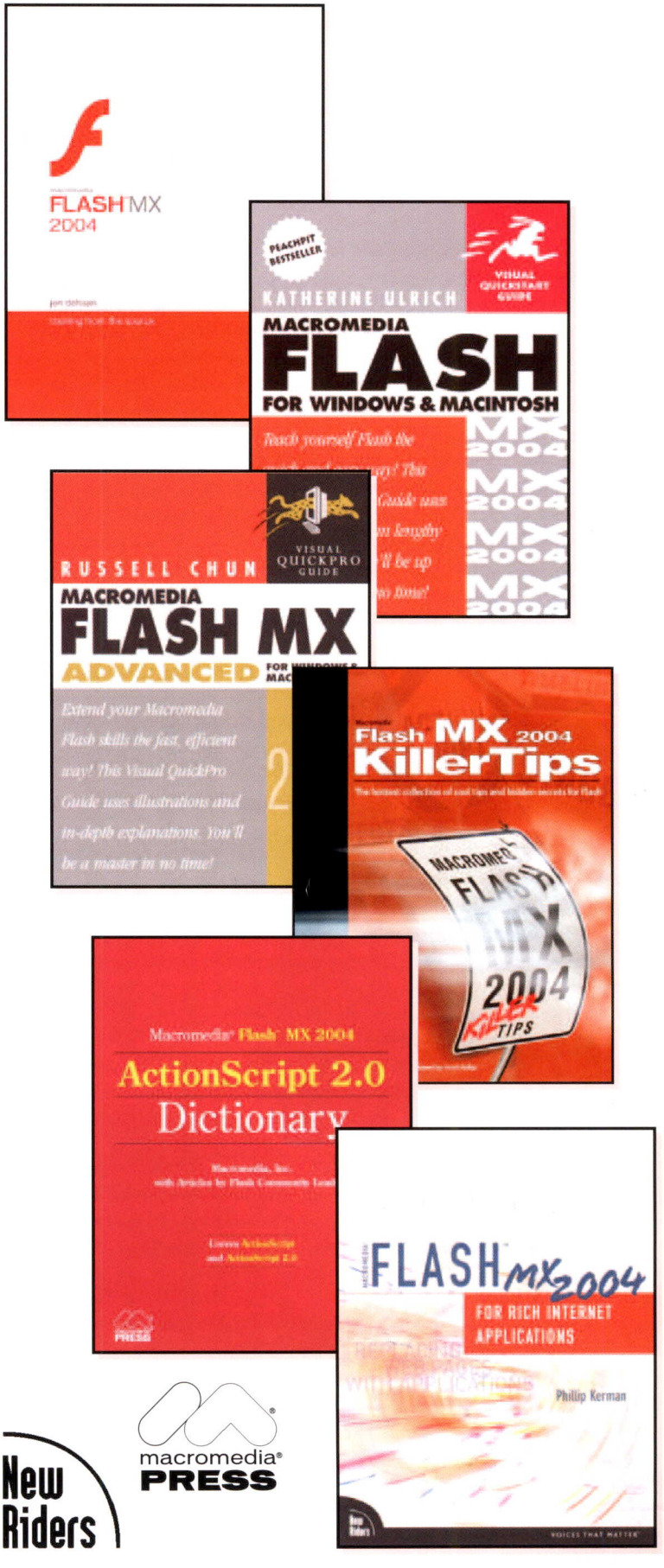


New Riders

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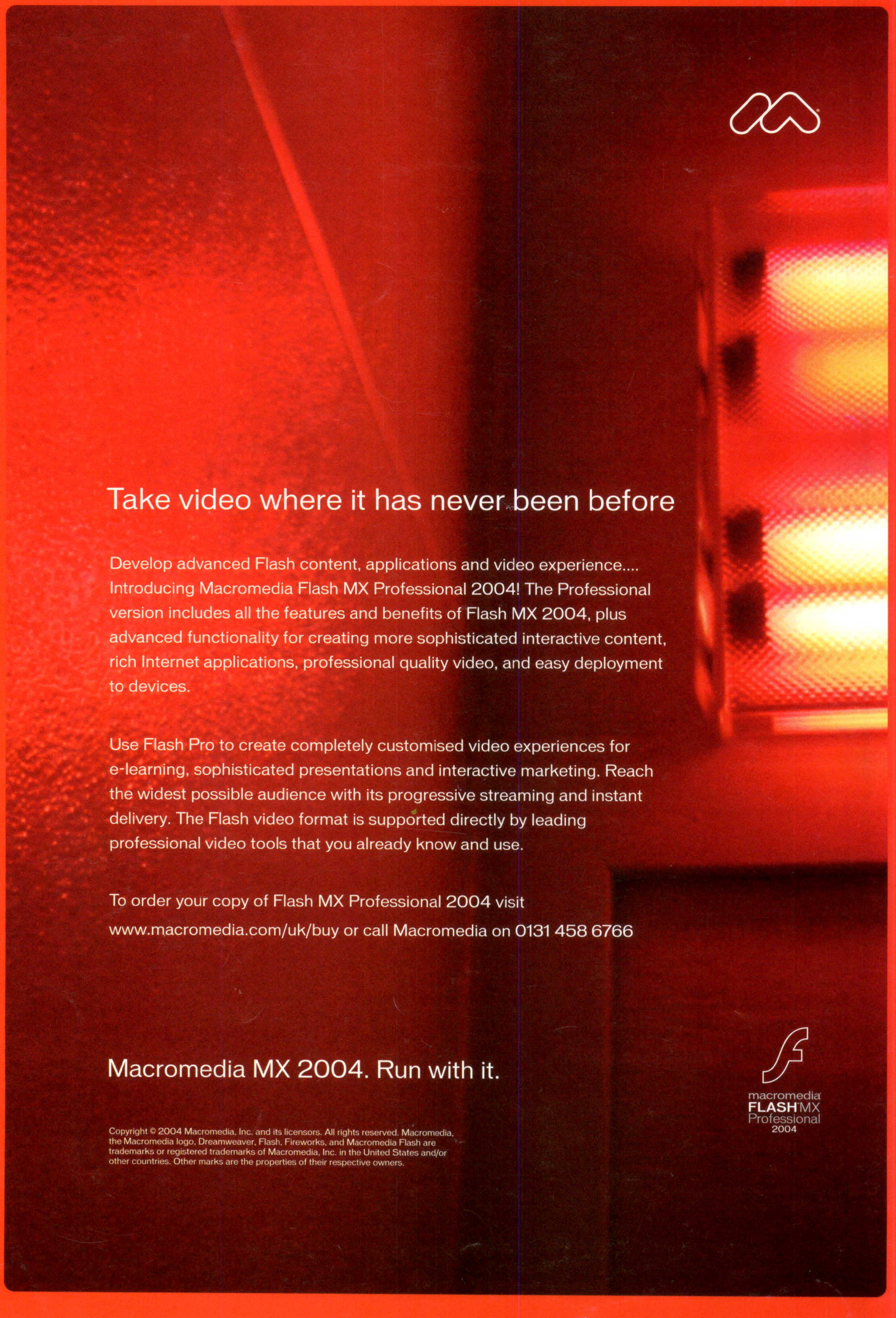
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